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**UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION**

ORACLE AMERICA, INC.

Plaintiff,

v.

GOOGLE, INC.

Defendant.

Case No. CV 10-03561 WHA

**DECLARATION OF PETER KESSLER IN
SUPPORT OF ORACLE AMERICA,
INC.'S OPPOSITION TO GOOGLE'S
MOTION TO STRIKE PORTIONS OF
THIRD EXPERT REPORT**

Dept.: Courtroom 8, 19th Floor
Judge: Honorable William H. Alsup

1 I, PETER KESSLER declare as follows:

2 1. I am an employee of Oracle America, Inc. ("Oracle"). My title is Consulting Member
3 of Technical Staff.

4 2. I have personal knowledge of the facts set forth herein. If called upon to testify, I
5 could and would testify as follows.

6 3. I have a bachelor's degree in science from Yale College and a Ph.D. in electrical
7 engineering and computer science from the University of California at Berkeley. I have been
8 implementing languages and their runtime systems since the late 1970s. I began working with Sun
9 Labs in 1990, where I worked on experimental operating systems, distributed programming, and the
10 Java platform. I have also worked on core libraries and the performance of virtual machines. I am
11 the inventor or co-inventor of more than a dozen patents related to Java technology, and at least 10
12 others related to language implementation.

13 4. I have been employed as an engineer with Sun Microsystems, Inc. ("Sun"), now
14 Oracle, since 1990. Through my years of working at Sun, I have become very familiar with the Java
15 technology, and I have helped to design and improve the Java platform as part of my regular work
16 responsibilities at various points throughout my tenure at Sun, now Oracle.

17 5. For example, as noted above, I have been working on the Java platform since its very
18 first iterations. I started working on the Java platform in 1995, when I began working on the
19 implementations of Java class libraries. I worked on the Java platform at Sun consistently from 1995
20 through 2008.

21 6. In addition to my regular engineering responsibilities, I served on Sun's Java Software
22 Patent Review Committee from October 2004 until mid 2008, and then resumed that role on the Sun
23 Software and Operating System Patent Review Committee in late 2009. I continue to serve on that
24 committee today. In that capacity, I review inventions disclosed by engineers that the inventors
25 believe are novel and likely to provide some significant benefit to the performance or functionality of
26 Oracle's software products. Accordingly, I am required to apply my engineering judgment to
27 determine whether an idea has technical merit and whether it is likely to provide a meaningful
28 improvement over existing technology. I and other Java engineers routinely make these assessments

1 without the benefit of formal, quantitative testing. I personally am able to do so because of my years
2 of practical experience as an engineer, my deep familiarity with Java and the history of innovation in
3 Java, and my other regular, day-to-day responsibilities as a Java engineer.

4 7. I was therefore employed at Sun, and knowledgeable about the Java technology, in the
5 2006 time frame, when Sun and Google were actually negotiating for a Java license for Android.

6 8. In addition to the experience I outlined above, I have direct experience with a number
7 of Java patents, and have direct experience evaluating the performance benefits that certain Java
8 patents provide. I have evaluated patents in terms of their engineering performance before.

9 9. I, along with four of my colleagues at Oracle, was asked by counsel for Oracle to
10 conduct an analysis of certain patents held by Sun Microsystems, Inc. in the spring of 2006.
11 Specifically, counsel requested that we determine which of Sun's Java patents would have been
12 potentially relevant to a smartphone platform in 2006, and then determine which of those patents
13 would have been expected, from an engineering perspective, to provide the greatest benefits to such a
14 platform.

15 10. Along with the other engineers, I concluded that we could provide the analysis
16 requested by counsel through the following steps:

- 17 • Identify relevant "blocks" of technology corresponding to functions that would be
- 18 expected to be useful to a smartphone platform in 2006;
- 19 • Identify what subset of Sun's patent portfolio would have been useful to a smartphone
- 20 platform in 2006;
- 21 • Assign those potentially relevant patents to the technology blocks;
- 22 • Rank the relative importance of those technology blocks; and
- 23 • Rate each patent on a three-point scale.

24 11. I was not asked to provide any economic valuation of the patents in suit. Instead, my
25 analysis of "value" was confined to the engineering benefit that the patents would be expected to
26 provide a smartphone platform.

27 12. Throughout the process, I understood that Dr. Mark Reinhold was the leader of the
28 team. I understood that he would make all final decisions, and that I was helping him to review the

1 patents in the interest of time and to ensure that the final analysis was as accurate and comprehensive
2 as possible.

3 13. Dr. Reinhold asked me to begin working on this project on or about January 24, 2012.
4 I had not done any work for Prof. Cockburn prior to that date.

5 14. At the outset of the process, I understand that George Simion of Oracle ran searches
6 through Sun's patent databases to acquire a list of over 1,300 Java related patents that we were to
7 review. I reviewed this list to make sure that it included all of the patents that I would expect to see,
8 and confirmed that it did.

9 15. In the first step of the process, our team, led by Dr. Reinhold, identified 22 technology
10 blocks that would have been relevant to a smartphone platform in 2006. We brainstormed the list of
11 logical functional components on or about January 24, 2012; over the course of the next few days, we
12 refined that list to come up with the final list of 22 blocks. In order to contribute to this exercise, I
13 used my personal experience, expertise, understanding of Google's objectives in 2006 based on a
14 Product Requirements Document that I understand Google provided to Sun in 2006, and knowledge
15 of the Java platform. I am confident that the 22 technology blocks that we identified represent the
16 full range of Java technology that would have been relevant to a smartphone in 2006.

17 16. In the second step of the process, our team as a whole, led by Dr. Reinhold, reviewed
18 every one of the patents in the list of 1,300+ patents captured by the searches discussed above to
19 determine which patents would have been relevant to a smartphone platform in 2006.

- 20 • Our team divided up the group of 1,300+ patents to ensure that every patent was
21 evaluated by at least one person. We could not all look at every patent because of
22 limitations on time. I personally looked at each patent I was assigned to evaluate with
23 care, and I have no reason to believe my colleagues did not do the same.
- 24 • We reviewed the patents by looking at the titles, abstracts, descriptions, application
25 dates, and inventor names. When we believed it would be useful to do so, we also
26 reviewed the specifications and claims by retrieving the patent from the USPTO web
27 site. This is a reasonable way to ascertain a patent's rough usefulness in a smartphone,
28 because, in my experience, the abstract and description are written by engineers, will

provide the most useful information to another engineer, and will explain the general purpose of a patent and its claimed invention with enough specificity to understand its scope, application, and potential advantages. In contrast, in my experience information in the claims is less useful.

- Although reviewing and categorizing the patents was time-consuming, it was not hard. Patents filed by Java engineers relating to improvements in Java technology use familiar terms, and in many cases I myself or another member of the team had direct experience with the invention or implementations of the invention.
- I finished reviewing my portion of the 1,300+ patents on or about January 26, 2012.
- When we had finished classifying each patent we were assigned to review, the members of the team who had special expertise with one or more of the technology blocks reviewed and confirmed the accuracy of our categorization. We discussed any inconsistently classified patents, and discussed any patents that I or one of my colleagues had indicated needed further attention or discussion.

17. At the end of this part of the process, I again reviewed the final list of all patents that could have been relevant in a smartphone platform in 2006. The final responsibility for deciding on the list of potentially relevant patents fell to Dr. Reinhold. After this process, Dr. Reinhold determined that 569 patents out of the original 1,300+ would, in fact, be potentially relevant to a smartphone platform in 2006, and had classified each of those patents into one of the 22 groups. I agreed with his determinations.

18. In the third step of the process, our team, led by Dr. Reinhold, ranked the 22 technology groups. We distinguished among them by determining the benefits they would be expected to provide a smartphone platform in terms of speed, startup, footprint (i.e. memory requirements), and security.

- We determined that these four criteria were reasonable criteria on which to rank the technology blocks because software patents in the Java portfolio are almost always designed to provide one of these benefits. In my experience, and based on my knowledge of the Java platform, if I were to consider what benefits I would want to provide a Java-

1 based smartphone in 2006, these are the criteria I would choose. These are the criteria
2 that we routinely used at Sun and now at Oracle to evaluate our own Java
3 implementations.

- 4 • We ranked these groups independent of the patents that were contained within them.
- 5 • Based on our ranking system, two or more groups occasionally tied.

6 19. We had completed this process on or about January 31, 2012.

7 20. In the fourth step of the process, our team, led by Dr. Reinhold, reviewed the specific
8 patents, and evaluated each patent on a three-point scale, in which the best score was a 1. The ratings
9 reflected the benefit that our team, led by Dr. Reinhold, would have expected the patented inventions
10 to provide a smartphone platform in 2006. The top rating, a 1, was reserved for those patents that
11 were either required by the Java platform specification for compatibility, or that would bring an order
12 of magnitude improvement to the key metrics of speed, startup, footprint, or security. The middle
13 rating, 2, was assigned to patents that would bring a significant improvement to the key metrics of
14 speed, startup, footprint, or security. The bottom rating, 3, was assigned to patents that would have
15 been relevant but would not have provided the benefits of a 1 or 2 rated patent.

16 21. By the time we began to rate the patents, we had reviewed many of them multiple
17 times, in addition to our pre-existing familiarity with the underlying inventions. Again, I am
18 confident that we had sufficient information to make an informed engineering assessment of the
19 likely benefits of each patent. I and other senior engineers at Oracle, including each of the other four
20 engineers on this assignment, regularly are called upon to make assessments of proposed innovations
21 and improvements to Java technology. I and other engineers frequently make those assessments
22 using information that is no more detailed than what is disclosed in the patent abstracts and
23 descriptions. In addition, I was able to apply my own knowledge of how the inventions had been
24 implemented, and the engineering benefits (or lack thereof) that resulted. The other engineers often
25 had similar experiences that they shared with the team as we reviewed the patents and that informed
26 our collective assessment. I agreed with all of the ratings that we settled on as a group.

27 22. In summary, we concluded:

- 28 • A group of 569 patents would be relevant to a smartphone in 2006.

- Those 569 patents fit into 22 technology groups.
- The most important technology group is the Boot group.
- There were seven patents rated as 1 in the Boot group.
- The second most important technology group is the JIT group.
- There were twelve patents rated as 1 in the JIT group.
- The third most important technology group is the interpreter group.
- There were three patents rated as 1 in the interpreter group.
- It would not be possible, based solely on engineering considerations that would be knowable in 2006, to say which of the 22 patents we identified in the top three groups was the most or least valuable to a smartphone platform such as Android.

23. I believe that both the process we employed, and the results we came to, are reasonable and accurate. If I were on a team assigned to design a Java-based smartphone platform in 2006, the three most important groups of technology in terms of startup, speed, and footprint would have been boot, JIT, and interpreter.

24. I am confident that the team had sufficient information to ascertain the correct rating for each patent, and that we had the collective expertise with the Java platform to understand the relative importance of every one of the technology groups in a smartphone platform in 2006 and every one of the patents in the list of 569. I do not believe that there is anyone at Oracle that we could have added to the team who would have improved the accuracy of the process or the results.

25. Although I have some knowledge of the Android platform, and I have assisted lawyers in analyses to determine whether Android infringes Oracle's patents, neither aspect of my past work had any effect on my work for this assignment. My assistance in that regard was not confined to the seven patents on which Oracle has sued Google – I had looked at numerous other Java patents as well. I understand that Google has also claimed in papers filed with the Court I and my colleagues are “the very engineers who selected litigation patents at the outset.” I know that statement to be false with respect to me. I have never selected any patents for this litigation or any other.

26. I understand that Google has also claimed in papers filed with the Court that I and my colleagues “admitted in deposition that they spent next to no time compiling their rankings and were

1 influenced by their prior work in this case.” I understand that Google also asserts in its papers that I
2 and my colleagues “favor[ed] the patents they had already analyzed as part of this case.” I know that
3 all of those assertions are entirely untrue with regard to me, and are contrary to everything I observed
4 as I watched my colleagues perform their work alongside me. Together we spent significant time
5 categorizing, evaluating, and rating the patents, and applied decades of directly relevant engineering
6 experience to do so. There was sufficient time to do the analysis that we were asked to do, and to do
7 so in a reliable and responsible manner. I did not “favor” any of the asserted patents for any reason
8 related to the litigation, and I was not “influenced” by my prior work in the litigation. The assistance
9 I provided to help determine whether Android infringes Java patents did not cause me to mis-
10 categorize any patent, nor did it cause me to rate any patent higher or lower than its technical merits
11 warranted. I considered each patent and technology group based on the objective engineering benefit
12 I would have expected it to provide to a smartphone platform in 2006, in light of my engineering
13 experience and my knowledge of Java technology, as described above.

14 I declare under penalty of perjury that the foregoing is true and correct.

15
16 DATED: February 23, 2012

/s/ Peter Kessler

PETER KESSLER

ATTESTATION OF FILER

I, Steven C. Holtzman, have obtained Peter Kessler's concurrence to file this document on his behalf.

Dated: February 24, 2012

BOIES, SCHILLER & FLEXNER LLP

By: /s/ Steven C. Holtzman
Steven C. Holtzman

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